

REMARKS

This is in response to the Office Action dated February 20, 2007, in which claims 1-4, 9-13, 15-18, 26-30, 35-40, 42-49, 51, 57, 58, 64, 66, 67, and 69 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Abe et al. (WO 2004/037960 A1) in view of Li et al. (U.S. Pat. No. 6,214,777 B1); claim 14 was rejected under 35 § U.S.C. as being unpatentable over Abe in view of Li et al. and Behler et al. (U.S. Pat. No. 4,894,485); claims 19-24, 41, 56, 65, and 70 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Abe et al. in view of Li et al. and Person Hei et al. (U.S. Pat. No. 5,723,418); and claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Abe in view of Li et al., Person Hei et al., and Login et al. (U.S. Pat. No. 4,395,373). The Examiner also responded to Applicant's arguments. With this Amendment, claims 1, 30, 44, 57, and 67 have been amended. In reliance on the following remarks, the present application with pending claims 1-4, 9-30, 35, 36, 38-49, 51, 56-58, 64-67, 69, and 70 is in condition for allowance, and reconsideration and notice to that effect are respectfully requested.

Examiner's Response to Arguments

In the Office Action, the Examiner asserted that the criticality of utilizing a C₉-C₁₁ alkoxyated alcohol as a foam destabilizer is not adequately supported by the specification because Example 1 and Comparative Example L have differing component concentrations of sodium alkyl naphthalene sulfonate (50% active), C₉-C₁₁ alkoxyated alcohol, C₈-C₁₀ alkoxyated alcohol chlohralyl triaza azoniaadamentane, sodium laureth-13-carboxylate, water (zeolite), and sodium hydroxide. (Office Action dated February 20, 2007, para. 1). Although the components listed above were present in varying concentrations in Example 1 and Comparative Example L, Applicant submits a Declaration by an inventor of the subject matter of the present application that the functions of those components would have no effect on the foam destabilizing properties of the compositions. In particular, the sodium alkyl naphthalene sulfonate (50% active) functions solely as a coupling agent, the chlohralyl triaza azoniaadamentane functions solely as a preservative, the sodium laureth-13-carboxylate functions solely as a surfactant, and the sodium hydroxide functions

solely as a pH adjuster. (See Declaration; Page 16, Table 1 and Page 22, Table 9). The amount of water presenting in the composition would also have no effect on the foam destabilizing properties of the compositions.

In response to the Examiner's assertion that there is an overlap between the C₉-C₁₁ alkoxylated alcohol used in Example 1 and the C₈-C₁₀ alkoxylated alcohol used in Comparative Example L, all of the examples used DEGRESSAL® SD 20, a C₉-C₁₁ propoxylated alcohol. (See Declaration). Claims 1, 30, 44, 57, and 67, as well as the specification, have been amended to specify that the defoamer is a C₉-C₁₁ propoxylated alcohol. By contrast, the composition of Comparative Example L used a C₈-C₁₀ alkoxylated alcohol, having only ethoxylation and propoxylation. (See Declaration). Surfactants with propoxyl groups are less water soluble than surfactants with ethoxyl groups, such as C₈-C₁₀ alkoxylated alcohol. Although lower water solubility is a key factor to defoaming, propoxylated alcohols have not typically been used because they are harder to keep in solution. However, with the correct structure, there is adequate water solubility and good defoaming properties. Thus, the ranges of the alcohols do not overlap as the C₉-C₁₁ alkoxylated alcohol is propoxylated, while the C₈-C₁₀ alkoxylated alcohol is ethoxylated and propoxylated, making them entirely different alcohols.

In the Office Action, the Examiner's asserted that utilizing a foam destabilizer, compared to no foam destabilizer, is disclosed broadly in Abe et al. (Office Action dated February 20, 2007, para. 2). Abe et al. briefly discloses that additives such as foam inhibitor agents, foam regulators, or foam stabilizers can be added to the aqueous solution. (Page 6, lines 8-14). However, there is no mention of any specific foam inhibitor agents, foam regulators, or foam stabilizers in the specification. In fact, the examples do not even mention using a foam inhibitor agent, foam regulator, or foam stabilizer. By contrast, amended independent claims 1, 30, 44, 57, and 67 require a C₉-C₁₁ propoxylated alcohol as a foam destabilizer. Comparative Examples H and I illustrate that utilizing a foam destabilizer is critical in controlling the amount of foam produced. Comparative Examples H and I did not include any foam destabilizer and did not perform as well as Example 1, which included the C₉-C₁₁ propoxylated alcohol. (Page 23, Table 10). Examples 1 and 2 and

Comparative Examples J, K, L, and M further illustrate that the specific foam destabilizer utilized in the composition is also critical. Comparative Examples J, K, L, and M included foam destabilizers other than a C₉-C₁₁ propoxylated alcohol, all of which did not perform as well as Examples 1 and 2 which included the C₉-C₁₁ propoxylated alcohol. (Page 23, Table 10 and Page 25, Table 12). The alkyl chain length is significant because it affects the solubility in water. As stated in the specification, "Suitable foam destabilizers include those that fall under the general category of non-ionic surfactants. One class of suitable non-ionic surfactants includes the alkoxyated alcohols including propoxylated alcohols. Suitably, the [propoxylated] alcohol has about 8 to 16 carbon atoms, more suitably about 9 to 11 carbon atoms." (Page 6, lines 32-34 and Page 7, lines 1-2). "A specific example of a suitable alkoxyated alcohol includes, but is not limited to, DEGRESSAL® SD 20, a propoxylated alcohol." (Page 7, lines 3-5).

In the Office Action, the Examiner asserted that the criticality of utilizing the specific C₉-C₁₁ alcohol as compared to a low foam surfactant is not adequately supported by the specification because Example 1 and Comparative Example J have differing component concentrations of sodium alkyl naphthalene sulfonate (50% active), C₉-C₁₁ alcohol, low foam surfactant concentrate, proprietary amine based gemini surfactant, chlohralyl triaza azoniaadamentane, water (zeolite), and sodium hydroxide. (Office Action dated February 20, 2007, para. 3). Although the components listed above were present in varying concentrations in Example 1 and Comparative Example J, Applicant submits a Declaration by an inventor of the subject matter of the present application that the functions of those components would have no effect on the foam destabilizing properties of the compositions. In particular, the sodium alkyl naphthalene sulfonate (50% active) functions solely as a coupling agent, the chlohralyl triaza azoniaadamentane functions solely as a preservative, and the sodium hydroxide functions solely as a pH adjuster. The amount of water presenting in the composition would also have no effect on the foam destabilizing properties of the compositions. (See Declaration; Page 16, Table 1 and Page 22, Table 9). In addition, although the amounts of defoamer used in Example 1 and Comparative Example J are different, Example 1 contained only 5% by weight defoamer, while Comparative Example J contained 10.85% defoamer. Therefore,

even though the amounts of defoamer differed, Comparative Example J contained more than twice the amount of defoamer present in Example 1, illustrating the superior effects of the C₉-C₁₁ propoxylated alcohol as a foam destabilizer.

Rejections under 35 U.S.C. § 103

In the Office Action, claims 1-4, 9-13, 15-18, 26-30, 35-40, 42-49, 51, 57, 58, 64, 66, 67, and 69 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Abe et al. in view of Li et al. Independent claims 1, 30, 44, 57, and 67 of the present application have been amended to require that the defoamer or foam destabilizer of the lubricant composition is a C₉-C₁₁ propoxylated alcohol. Abe et al. and Li et al. do not individually, or in combination, show, suggest, or teach using a C₉-C₁₁ propoxylated alcohol as a foam destabilizer. Abe et al. briefly discloses that additives such as foam inhibitor agents, foam regulators, or foam stabilizers can be added to the aqueous solution. (Page 6, lines 8-14). However, there is no mention of any specific foam inhibitor agents, foam regulators, or foam stabilizers in the specification. In fact, the examples do not even mention using a foam inhibitor agent, foam regulator, or foam stabilizer. The Office Action relied on the alkoxylated alcohol of Li et al., being used as a detergent and lubricant. The alkoxylated alcohol in Li et al. does not teach a C₉-C₁₁ propoxylated alcohol foam destabilizer as defined in the amended claims. Li et al. uses the alkoxylated alcohol as a surfactant to increase detergency and lubricity. (Col. 6, lines 59-62; Col. 7, lines 18-25). There is no support in either Abe et al. or Li et al. to optimize foam destabilizing properties of a lubricant composition by using a C₉-C₁₁ propoxylated alcohol. Even if Abe et al. were to utilize the surfactants disclosed in Li et al., any optimization performed would have been to enhance detergency or lubricity properties of the lubricant composition, rather than foam destabilizing properties of the lubricant composition. By contrast, independent claims 1, 30, 44, 57, and 67 require a C₉-C₁₁ propoxylated alcohol as a foam destabilizer. The alkyl chain length is significant because it affects the solubility in water. As stated in the specification, "Suitable foam destabilizers include those that fall under the general category of non-ionic surfactants. One class of suitable non-ionic surfactants includes the alkoxylated alcohols including propoxylated alcohols.

Suitably, the [propoxylated] alcohol has about 8 to 16 carbon atoms, more suitably about 9 to 11 carbon atoms.” (Page 6, lines 32-34 and Page 7, lines 1-2). “A specific example of a suitable alkoxyated alcohol includes, but is not limited to, DEGRESSAL® SD 20, a propoxylated alcohol.” (Page 7, lines 3-5).

Neither Abe nor Li, individually or in combination, do not show, suggest, or teach using a C₉-C₁₁ propoxylated alcohol as a defoamer. Therefore, the rejections to independent claims 1, 30, 44, 57, and 67 under 35 U.S.C. § 103 should be withdrawn and claims 1, 30, 44, 57, and 67 allowed. In that independent claims 1, 30, 4, 57, and 67 are in condition for allowance, the rejections to claims 2-4, 9-29, 35, 36, 38-43, 45-49, 51, 56, 58, 64-66, 69, and 70, which depend therefrom, should be withdrawn as well and claims 2-4, 9-29, 35, 36, 38-43, 45-49, 51, 56, 58, 64-66, 69, and 70 allowed.

In the Office Action, claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Abe in view of Li and Behler. In that independent claim 1 is in condition for allowance, the rejection to claim 14, which depends therefrom, should be withdrawn and claim 14 allowed.

In the Office Action, claims 19-24, 56, 65, and 70 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Abe in view of Li and Person Hei. In that independent claims 1, 44, 57, and 67 are in condition for allowance, the rejections to claims 19-24, 56, 65, and 70, which depend therefrom, should be withdrawn and claims 19-21, 23, 24, 56, 65, and 70 allowed.

In the Office Action, claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Abe in view of Li and Person Hei. In that independent claim 1 is in condition for allowance, the rejection to claim 25, which depends therefrom, should be withdrawn and claim 25 allowed.

First Named Inventor: Richard O. Ruhr

Application No.: 10/781,385

-17-

Conclusion

In view of the foregoing, pending claims 1-4, 9-30, 35, 36, 38-49, 51, 56-58, 64-67, 69, and 70 are in condition for allowance. Notice to that effect is respectfully requested.

Respectfully submitted,

KINNEY & LANGE, P.A.

Date: 4/17/07

By: 

Ann Kulprathipanja, Reg. No. 50,608
THE KINNEY & LANGE BUILDING
312 South Third Street
Minneapolis, MN 55415-1002
Telephone: (612) 339-1863
Fax: (612) 339-6580

AK